Characterization of Bacteriocins Produced by Spore Former Bacteria Isolated from Soil

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Background & Objectives: Bacteriocins are proteinaceous substances with antimicrobial activity especially against relative family and these compounds could be considered a new source of remedy. Hence major purpose of this study was characterization of bacteriocins produced by spore former soil bacteria.

Methods: To perform this investigates four strains of bacteriocin producing spore former bacteria were isolated from soil and identified by phenotypic and genotypic Methods. Two strains of isolates were Bacillus subtilis (bacteriocin sp1 and sp2 producer) and two strains were Bacillus amyloliquefaciens (bacteriocin sp3 and sp4 producer). All bacteriocins sp1, sp2, sp3 and sp4 were characterized based on their Arbitrary Units and activity at various pHs and thermostability. In addition, antimicrobial spectrum of bacteriocins with use of well diffusion agar (WDA) was assessed on pathogenic microorganisms such as *Escherichia coli , Bacillus cereus, Corynebacterium sp., Listeria monocytogens, Klebsiella pneumonia, Salmonella typhimurium, Shigella flexneri, Proteus mirabilis, Pseudomonas aeruginosa, Candida albicans, Penicillium sp.* and *Aspergillus sp.*

Results: The results obtained indicated that *E. coli* was resistant to all bacteriocins other than sp2 while, *Salmonella typhimurium* and *proteus mirabilis* were sensitive to all bacteriocins. In addition, all fungi were resistant to bacteriocins other than sp4. Of all bacteriocins antimicrobial activity of bacteriocin sp1 was relatively more and bacteriocin sp3 was less.

Conclusion: In general, bacteriocins produced by sporeformer bacteria might be considered new area of investigation in order to introduce new remedy for treatment of patients suffering from infections.

Keywords: Bacteriocin, Spore Former Bacteria; Antimicrobial Spectrum